Addendum to the Programme Specification

4702 BSc Mathematics with Actuarial Science

This Addendum has been produced to highlight the key changes made to the existing Programme Specification as a result of the University's response to the Covid-19 Pandemic. You should read it in conjunction with the relevant Programme Specification from the year you started your programme.

Programme Specification for entry in 2020-21
Programme Specification for entry in 2019-20
Programme Specification for entry in 2018-19

University level information

In view of COVID-19, the University has had to make changes to some elements of programme delivery for 2020-21. These changes have included the method of delivery, such as face-to-face and online, and the number of modules available.

The University aims to provide as much of a face-to-face component to your education as prevailing conditions at the time allow, combined with its new blended approach that will develop active independent and group online learning.

As the COVID-19 pandemic develops, the University's response to this and other issues may likewise need to evolve. The University will consult with student representatives as necessary and appropriate and will communicate changes to you as soon as practicable so that you have the information you need to understand how a change may impact you and what steps you need to take next. The University remains committed to supporting you as you learn.

Programme Information

In light of Covid-19, teaching and learning methods may be adapted. Lectures, seminars, tutorials, and consultation with academic staff may be delivered online or in person as the prevailing conditions allow. Group sizes for tutorials and seminars may be adjusted. Assessment methods may also be adapted. For example, in-class test may be replaced by assignments, weightings of assessments may change, exams may be replaced by coursework or take-home assignments and group presentations and projects may take place online or be adapted to allow for social distancing guidelines.

We will follow IFoA guidelines with respect to Actuarial Science exemption requirements. This may mean modification of assessment and/or online timed assessment.

Programme Structure

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note that, in some instances, modules have limited spaces available.

Part 1
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Semester 1				Semester 2			
Modules	**ECTS**	**CATS**	**Module type**	**Modules**	**ECTS**	**CATS**	**Module Type**
MATH1048 Linear Algebra I	7.5	15	Core				
MATH1059 Calculus	7.5	15	Core				
MATH1046 First Year Mathematics Workshop					0	0	Comp
MATH1053 TT Personal Tutor meeting					0	0	Comp
MATH1024 Introduction to Probability and Statistics	7.5	15	Comp	MATH1049 Linear Algebra II	7.5	15	Comp
				MATH1058 Operational Research I and Mathematical Computing	7.5	15	Comp
				MATH1060 Multivariable Calculus	7.5	15	Comp

The option modules shown below constitute an indicative list, there will always be choice but the options might vary between years.

Select 2 Modules

It is normally expected that students select ECON1002 & ECON1003/ECON1001, as these correspond to professional actuarial exemptions. If you do not want to qualify for this you may choose not to take these modules.
Students may select ECON1001 or ECON1003 (Not both). If you have NOT passed Economics at A Level, or an equivalent level, select ECON 1001 only, if you HAVE passed Economics at A Level select ECON 1003 only.

Programme regulations require you take minimum of 5 'named modules' during your degree. These are;
Part 1: ECON1001, ECON1002, ECON1003
Part 2: MATH2012, MANG2014
Part 3: MATH3085, MATH3063, MATH3022, MATH3066, STAT3010.

You must take a min of 16 MATH modules (120 ECTS/240 CATS) from a mix of core/compulsory/optional modules during your degree. MATH modules included in the 'named modules' list may contribute to this.
There is flexibility for students to take alternative modules (e-g- Languages) but any request must be discussed with & approved by the Programme Director.

Modules	**ECTS**	**CATS**	**Module type**	**Modules**	**ECTS**	**CATS**	**Module Type**
FREEXX15 Part 1 Elective	7.5	15	Option	FREEXX15 Part 1 Elective	7.5	15	Option
LANGXX15 Language Module	7.5	15	Option	LANGXX15 Language Module	7.5	15	Option
LANGXX30 Language Module	7.5	15	Option	LANGXX30 Language Module	7.5	15	Option
ECON1001 Foundations of Microeconomics	7.5	15	Option	ECON1002 Principles of Macroeconomics	7.5	15	Option
ECON1003 Principles of Microeconomics	7.5	15	Option	MATH1057 Dynamics and Relativity	7.5	15	Option
MATH1001 Number Theory	7.5	15	Option				

Part 2

Semester 1				Semester 2			
Modules	**ECTS**	**CATS**	**Module type**	**Modules**	**ECTS**	**CATS**	**Module Type**
MATH2011 Statistical Distribution Theory	7.5	15	Comp	MATH2010 Statistical Modelling I	7.5	15	Comp
MATH2039 Analysis	7.5	15	Comp	MATH2038 Partial Differential Equations	7.5	15	Comp
MATH2040 Financial Mathematics	7.5	15	Comp				

Option Modules:

Select 22.5 ECTS/45 CATS from the list of optional modules.
Note: Programme regulations require you to undertake a minimum of 5 'named degree modules'during your degree. 'Named degree modules' are;
Part 1: ECON1001, ECON1002, ECON1003
Part 2: MATH2012, MANG2014
Part 3: MATH3085, MATH3063, MATH3022, MATH3066, STAT3010.

Please bear this in mind when making your selections below.
You are also required to undertake a min of 16 MATH modules (240 Credits) from a combination of core/compulsory/optional modules during your degree. MATH modules included in the `named degree modules' list may contribute to the required modules.

Note: Please do NOT select modules you have taken previously. Please also ensure that you select an even split of credits overall by semester, including your compulsory modules. A maximum of 15 credits in any level NQF4 module in subject MATH. A maximum of 15 credits in any level NQF5 module in subject MATH. A maximum of 15 credits in any level NQF5 module in subject UOSM.							

Modules	ECTS	CATS	Module type	Modules	ECTS	CATS	Module Type
FREEXY15 Part 2 Elective	7.5	15	Option	FREEXY15 Part 2 Elective	7.5	15	Option
LANGXX15 Language Module	7.5	15	Option	LANGXX15 Language Module	7.5	15	Option
LANGXX30 Language Module	7.5	15	Option	LANGXX30 Language Module	7.5	15	Option
ECON2003 Microeconomics of Markets	7.5	15	Option	ECON2007 Econometrics 2	7.5	15	Option
				MANG2004 Portfolio Theory and Financial Markets	7.5	15	Option
				MANG2014 Accounting and Finance for Non-Specialists	7.5	15	Option
				MATH2012 Stochastic Processes	7.5	15	Option

Part 3

Semester 1				Semester 2			
Modules	ECTS	CATS	Module type	Modules	ECTS	CATS	Module Type
MATH3092 Mathematics Project					15	30	Comp
Option Modules: Select 45 to 90 CATS from a combination of the modules listed in PT3 R1 G1, PT3 R1 G2 and PT3 R1 G3. Note: Programme regulations require you to undertake a minimum of 5 'named degree modules' during your degree. 'Named degree modules' are; Part 1: ECON1001, ECON1002, ECON1003 Part 2: MATH2012, MANG2014 Part 3: MATH3085, MATH3063, MATH3022, MATH3066, STAT3010. Please bear this in mind when making your selections below. You are also required to undertake a min of 16 MATH modules (240 Credits) from a combination of core/compulsory/optional modules during your degree. MATH modules included in the `named degree modules' list may contribute to the required modules. Note: Please do NOT select modules you have taken previously. Please also ensure that you select an even split of credits overall by semester, including your compulsory modules.							
Select 3 modules (22.5 ECTS/45 CATS) up to a maximum of 6 modules (90 CATS) from the following:							

Modules	ECTS	CATS	Module type	Modules	ECTS	CATS	Module Type
MATH3016 Optimization	7.5	15	Option	MATH3006 Relativity, Blackholes and Cosmology	7.5	15	Option
MATH3018 Numerical Methods	7.5	15	Option	MATH3017 Mathematical Programming	7.5	15	Option
MATH3033 Graph Theory	7.5	15	Option	MATH3022 Mathematical Finance	7.5	15	Option
MATH3044 Statistical Inference	7.5	15	Option	MATH3052 Mathematical Biology	7.5	15	Option
MATH3063 Actuarial Mathematics I	7.5	15	Option	MATH3066 Actuarial Mathematics II	7.5	15	Option
MATH3076 Hilbert Spaces	7.5	15	Option	MATH3078 Further Number Theory	7.5	15	Option
MATH3083 Advanced Partial Differential Equations	7.5	15	Option	MATH3080 Algebraic Topology	7.5	15	Option
MATH3085 Survival Models	7.5	15	Option	MATH3084 Integral Transform Methods	7.5	15	Option
MATH3090 Structure and Dynamics of Networks	7.5	15	Option	MATH3088 Complex Analysis	7.5	15	Option
				MATH3091 Statistical Modelling II	7.5	15	Option
				MATH3014 Design and Analysis of Experiments	7.5	15	Option
Select 0 modules up to a maximum of 1 module (7.5 ECST/15 CATS) from the following:- **Note: you are permitted to only 'backtrack' once to take a Part 2 module**							

Please note you cannot take MATH2049 Geometry and Topology if you have previously taken MATH2046							
A maximum of 15 credits in any level NQF5 module in subject UOSM							
Modules	**ECTS**	**CATS**	**Module type**	**Modules**	**ECTS**	**CATS**	**Module Type**
FREEXY15 Part 2 Elective	7.5	15	Option	FREEXY15 Part 2 Elective	7.5	15	Option
ECON2003 Microeconomics of Markets	7.5	15	Option	ECON2007 Econometrics 2	7.5	15	Option
				MANG2004 Portfolio Theory and Financial Markets	7.5	15	Option
Select 0 modules up to a maximum of 3 module (22.5 ECST/45 CATS)							
Modules	**ECTS**	**CATS**	**Module type**	**Modules**	**ECTS**	**CATS**	**Module Type**
FREEXZ15 Part 3 Elective	7.5	15	Option	FREEXZ15 Part 3 Elective	7.5	15	Option
LANGXX15 Language Module	7.5	15	Option	LANGXX15 Language Module	7.5	15	Option
LANGXX30 Language Module	7.5	15	Option	LANGXX30 Language Module	7.5	15	Option
ECON3015 Principles of Finance	7.5	15	Option	MANG3009 International Banking	7.5	15	Option
				MANG3020 Futures and Options	7.5	15	Option
				MANG3034 Project Management	7.5	15	Option
				STAT3010 Statistical Methods in Insurance	7.5	15	Option